

## CLAIMS

I claim:

1. A self-calibratable oscillating device, comprising:
  - a phase comparator including a first input port, a second input port and an output port;
  - a clock pad electrically connected to the first input port;
  - a crystal oscillator electrically connected to the second input port;
  - an analog/digital converter electrically connected to the output port of the phase comparator; and
  - a memory electrically connected to an output end of the analog/digital converter.
2. The self-calibratable oscillating device of Claim 1, wherein the crystal oscillator is a temperature-compensated crystal oscillator or a surface acoustic wave crystal oscillator.
3. The self-calibratable oscillating device of Claim 1, further comprising:
  - a first switch positioned between the first input port of the phase comparator and the clock pad;
  - a second switch positioned between the crystal oscillator and the clock pad, wherein the stream direction of the second switch is in reverse of that of the first switch; and
  - a logic control device for controlling the first switch and the second switch.

4. The self-calibratable oscillating device of Claim 3, further comprising:
  - a power pad; and
  - a high voltage detector electrically connected to the power pad and the logic control device.
5. The self-calibratable oscillating device of Claim 3, further comprising an embedded clock generator to provide an operation clock for the logic control device.
6. The self-calibratable oscillating device of Claim 5, wherein the embedded clock generator is a resistance-capacitor oscillator.
7. An ASIC for a crystal oscillator, comprising:
  - a system bus;
  - an embedded CPU electrically connected to the system bus;
  - a system memory electrically connected to the system bus;
  - a clock pad for receiving a reference clock;
  - a phase comparator for generating a phase difference signal between the reference clock and the clock of an oscillating device of the crystal oscillator; and
  - an analog/digital converter for converting the phase difference signal into a digital signal.

8. The ASIC for a crystal oscillator of Claim 7, further comprising:

a first switch positioned between the phase comparator and the clock pad; and

a second switch positioned between the oscillating device and the clock pad.

9. The ASIC for a crystal oscillator of Claim 8, further comprising a register electrically connected to the system bus for storing data of the system memory when the second switch is turn on.

10. A method for calibrating oscillating devices, comprising the steps of:

connecting a plurality of oscillating devices in parallel;

inputting an activation signal and a reference clock from a testing machine to the oscillating devices;

comparing the reference clock with the clock of an internal crystal oscillator inside each oscillating device to generate a phase difference signal; and

writing the phase difference signal into an internal memory in each oscillating device.

11. The method for calibrating oscillating devices of Claim 10, wherein the activation signal keeps a voltage higher than a threshold voltage.

12. The method for calibrating oscillating devices of Claim 10, further comprising a step of checking if an environmental temperature is equal to a final calibrating temperature.

13. The method for calibrating oscillating devices of Claim 10, further comprising a step of converting the phase difference signal into a digital signal.